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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/732,828	12/08/2000	Jari Mannermaa	460-009988-US(PAR)	3561

7590 12/22/2005

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EXAMINER

BURD, KEVIN MICHAEL

ART UNIT	PAPER NUMBER
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2631

DATE MAILED: 12/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/732,828	Applicant(s) MANNERMAA, JARI	
	Examiner Kevin M. Burd	Art Unit 2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-16 and 20-32 is/are rejected.
- 7) ☒ Claim(s) 4-6 and 17-19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. This office action, in response to the amendment filed 9/30/2005, is a non-final office action.

Response to Amendment

2. Applicant's arguments, see the remarks, filed 9/30/2005, with respect to the rejections of the claims have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, new grounds of rejection are made in view of Ma et al (US 4,998,111) with Kudhrehthaya et al (US 6,606,349) in view of Hughes (US 4,905,204).
3. The previous objection to the abstract is withdrawn but a new objection to the abstract is made due to the amendment.

Specification

4. The abstract of the disclosure is objected to because the abstract recites "A method for performing synchronization operations of a receiver comprising: using to a received code-modulated spread spectrum signal." Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3, 7-16 and 20-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ma et al (US 4,998,111) with Kudhrehaya et al (US 6,606,349) in view of Hughes (US 4,905,204).

Regarding claims 1-3, 7-16 and 20-32, Ma discloses a method for performing synchronization in a GPS receiver (abstract). A reference code is used to recover the frequency shift of the received signal and the code phase (figure 1, element 26). Samples are taken of the received signal (element 14). A first Fast Fourier transform (FFT) is formed based on the reference code (element 28). A second FFT is formed based on the sampled received signal (element 22). The outputs of the FFTs are multiplied (element 30) and input in an inverse FFT (IFFT) (element 32). The IFFT outputs the correlation function between the reference signals and the input RF signal (column 3, lines 47-50). The phase and frequency shift is determined by the correlation result. Ma discloses additional information in column 3, lines 14-61. Ma does not disclose receiving a code-modulated spread spectrum signal. However, Ma discloses receiving signals in a GPS receiver. Kudhrehaya discloses "The Global Positioning System uses spread spectrum technology to convey its data to ground units. The use of spread spectrum is especially advantageous in the GPS systems. Spread spectrum technology enables GPS receivers to operate on a single frequency, thus saving the additional electronics needed to switch and tune other bands if multiple frequencies were used. Spread spectrum also can minimize the power consumption requirements of

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the GPS system, for example, to require 50 watts or less and tolerate substantial interference.” (column 3, line 61 to column 4, line 3). Therefore, it is inherent, the GPS system of Ma receives code modulated spread spectrum as stated by Kudhrehaya. Ma does not disclose using Fast Hartley transforms in place of the FFTs described.

Hughes discloses FFT procedures can each be alternatively performed by using a Fast Hartley Transform (FHT) procedure instead of the FFT since the FHT provides an effective means for computing the forward and inverse Discrete Fourier Transforms (column 18, line 64 to column 19, lines 2). It would have been obvious for one of ordinary skill in the art at the time of the invention to substitute the FFT for the FHT as taught by Hughes into the GPS method and system of Ma for the reason stated above.

Allowable Subject Matter

6. Claims 4-6 and 17-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sato (US 6,574,205) discloses correlating a received signal and a reference signal. Both signals are converted by a FFT, multiplied together and the result input to an IFFT as shown in figure 3 and column 8, lines 26-34.

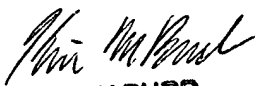
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Friday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin M. Burd
12/20/2005


KEVIN BURD
PRIMARY EXAMINER